COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM
CONFERENCE CALL NOTES
July 23, 2001
CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON

TMT Internet Homepage: http://www.nwd-wc.usace.army.mil/TMT/index.html

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FACILITATOR'S NOTES ON FUTURE ACTIONS
Facilitator: Donna Silverberg

The following notes are a summary of issues that are intended to point out future actions or issues that may need further discussion at upcoming meetings. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members.

Summer Spill:
In a continuation of last week's TMT and IT meetings, today's conference call focused on the possibility of summer spill and the specifics around a summer spill program in the lower Columbia River. The group today dealt with the possibility of 200 mw/mos of spill over three dams – Bonneville, John Day, and The Dalles. The decision on whether or not to spill will be made at tomorrow's IT meeting.
Rock Peters, Bill Maslin and Gary Fredericks met prior to the meeting to discuss biological benefits and/or detriments to spilling at each of these dams. Their recommendations were:

John Day: 24 kcfs is not enough to provide good fish egress conditions, which may be a detriment to fish, so do not spill at this dam.
The Dalles: 24-hour spill up to 40% (BiOp level), factoring in the 50 kcfs powerhouse minimum, if flows are 71 kcfs or higher. If there is less than 15 kcfs of spill, then stop spilling.
Bonneville: If there is 84 kcfs in the river, spill a minimum of 50 kcfs in addition to the 30 kcfs powerhouse minimum. If the river flow is lower, spill no less than 45 kcfs over a 24-hour period.

Rudd told the group of certain "miscellaneous" operations that aren't included in the total outflow from power generation. This would add an additional discharge of 9.2 kcfs to Bonneville and 5-7 kcfs at the Dalles to power and spill flow requirements.

Consensus: Members agreed to the suggested The Dalles hourly operation and no opposition was voiced concerning no spill at John Day. Most TMT members agreed that an on-off operation

at the Dalles would be less detrimental to the fish than a similar operation at Bonneville. Pursuing stabilized flows that support spill is the preferred operation.

Bonneville:
A question was raised about whether or not it would be appropriate or safe to spill lower than the 45 kcfs minimum at Bonneville. CRITFC, Oregon and Washington said that spilling whenever and as much as possible, even on an hour-to-hour basis, is beneficial to fish. Idaho raised concerns about the effects on adults and wanted to find a happy medium between no spill and 45 kcfs. Montana asked to see data that supports the biological benefits of such an action. NMFS did not support spilling below 45 kcfs because their biological models show that levels less than this create a higher risk to fish. NMFS supported the idea of hourly monitoring and spilling when the powerhouse could allow 45 or more kcfs. This might provide some spill every day. USFWS agreed with NMFS.

The COE suggested that one approach would be: whenever projected flows are 84.2 or above for a 5-hour period, spill for those hours. It was agreed that avoiding a multiple "on-off" operation is preferred. Salmon Managers suggested that 5 or more hours of spill a day, preferably in the morning or at dusk, would provide a benefit to safe fish passage. While there was no consensus on the final operation, TMT members agreed to take this proposal to IT.

ACTION: BPA and the COE will draft details of the proposal and present it at the IT meeting tomorrow. Salmon Managers will explore the optimal times for the spill operation.

Next Face-to-Face Meeting, August 1, 9-12:
Agenda items:
- Libby Update
- 28,000 MW Update (Reliability Criteria)
- Water Management Plan
- Emergency Protocols
- IT Update

***Note: Due to the Regional Executives meeting that has been scheduled for August 1, 9-1 pm, there may be a need to change the time of the TMT meeting.**

Meeting Minutes

1. Greeting and Introductions

The July 23 Technical Management Team conference call to discuss a potential 2001 summer spill program was chaired by Cindy Henriksen of the Corps and facilitated by Donna Silverberg. The following is a distillation, not a verbatim transcript, of items discussed at the meeting and actions taken. Anyone with questions or comments about these minutes should call

Henriksen at 503/808-3945.

Silverberg welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

2. Technical Discussion of Potential 2001 Summer Spill Program (Continued).

Just to bring everyone up to date, said Silverberg, TMT had a technical discussion about this issue last Friday morning; that conference call was followed on Friday afternoon by an IT discussion of the larger policy question of whether or not any sort of a spill program is feasible this summer. The outcome of that meeting was an IT request that TMT flesh out the specific details of a recommended spill program at Bonneville, The Dalles and John Day Dams, she said, including duration and volume. That discussion needs to touch on the limitations imposed by the 2001 water year, and the physical ability, or lack thereof, to provide spill and meet powerhouse minimum flows under the extremely low total river flows expected later in July and August. Paul Wagner added that the total summer spill volume discussed at Friday's IT conference call was 200 MW-months.

The group devoted a few minutes to a discussion of how this issue, and the spill program under consideration, evolved. The discussion then moved on to this morning's ad hoc technical discussion between NMFS, the Corps and others; Gary Fredricks said this group focused on the question of specific spill and powerhouse minimums at each project.

At John Day, said Fredricks, our conclusion was that the 24 Kcfs of spill that would result if we were to spill 30% of a total river flow of 80 Kcfs would not provide adequate egress conditions – that, at least, is NMFS' opinion, based on model results to date.

At The Dalles, said Fredricks, we're recommending spill of up to 40% of total river flow, as called for in the BiOp, with a minimum spill volume of 18 Kcfs spill at that project. That's for 24 hours, he added. At Bonneville, said Fredricks, the powerhouse minimum is 30 Kcfs; as long as total river flow is 80 Kcfs or more, it shouldn't be a problem to deliver 50 Kcfs spill. If total river flow falls below 80 Kcfs, Fredricks said, our recommendation is that Bonneville spill at least 45 Kcfs, 24 hours a day. What if total river flow at Bonneville falls below 75 Kcfs? one participant asked. Let's not go there, Fredricks replied. If flows do drop below 75 Kcfs for some hours, our basic recommendation is not to go below 45 Kcfs spill at Bonneville, said Peters; if you go below 45 Kcfs spill, that would likely be detrimental, rather than beneficial, to total project survival.

Turner noted that there is a 9.2 Kcfs "miscellaneous flow" discrepancy between hourly flows at Bonneville and combined powerhouse discharge and spill, because of things like navigation lock and fish ladder operations. What that means, he said, is that we probably need total river flows of closer to 89 Kcfs to maintain both the 30 Kcfs powerhouse minimum and the 50 Kcfs spill minimum. If spill drops below 45 Kcfs at that project, said Turner, would it make sense to stop spilling for an hour or two? We don't want to strand fish in the tailrace because spill falls too low or stops altogether, Fredricks asked.

In response to a question, Turner said the system is now at the point of real concern – day-average flow yesterday at Bonneville was 78 Kcfs. What about the suggestion that, if Bonneville spill falls below 45 Kcfs, spill would cease for a few hours until enough water can be stored to maintain 45 Kcfs spill once again? Silverberg asked. I'm not comfortable making that call, Fredricks replied; there simply isn't any data that would allow me to make an informed decision.

Bill Maslen said BPA is continuing to purchase power to maintain both minimum flows in the lower river and upriver storage; you can probably take 75 Kcfs as the minimum flow that will be provided at Bonneville for the foreseeable future, he said. With the 9 Kcfs miscellaneous flow constraint, we're likely to be well below the 45 Kcfs spill threshold at Bonneville for long periods in July and August, Maslen said. Does that mean spill at Bonneville is simply not practicable when flows are this low? Silverberg asked. That would be my interpretation, Maslen replied.

Fredricks noted that the second powerhouse fish unit passes 5 Kcfs; since that unit is generating power, shouldn't that 5 Kcfs apply to the 30 Kcfs powerhouse minimum? he asked. Turner said he would check on that; when he returned, he said that the 9.2 Kcfs "miscellaneous flow" total includes those portions of the second powerhouse fishway water that are supplied from the forebay through diffusers and the ladder exit, without going through power generating turbines. That portion that goes through F1 and F2, which is most of the fishway flow, is part of the powerhouse discharge and is applied to the 30 Kcfs minimum. The bottom line, Turner said, is that a total river flow of 89 Kcfs is still needed if the action agencies are to provide 50 Kcfs spill at Bonneville, and a total river flow of 84 Kcfs is needed if they are to provide 45 Kcfs spill at Bonneville.

Moving on to The Dalles, Fredricks reiterated that the recommendation of the ad hoc technical group was, again, to spill up to 40% of total river flow, but no less than 18 Kcfs. And what are today's flows at The Dalles? Jim Litchfield asked. Yesterday's average was 68.4 Kcfs, Ruth Abney replied. In other words, said Litchfield, we're already at the spill minimum at The Dalles. Maslen noted that the same question applies at The Dalles; what does the 5-7 Kcfs miscellaneous discharge represent? Henriksen said it is her understanding that, like at Bonneville, fish unit flows apply toward the powerhouse discharge while upper fish ladder and navigation lock discharges are accounted for in the miscellaneous flow. The bottom line is that, to provide 18 Kcfs of spill, total discharge at The Dalles needs to be 73 - 75 Kcfs, she said.

Is there a value to doing spill whenever you can at The Dalles, even a few hours at a time? Silverberg asked. I would say yes, Fredricks replied. Rock Peters stated that he agreed.

Bob Heinith said he is somewhat puzzled by this discussion of minimum flows, given the fact that there is four feet in Lake Roosevelt storage that needs to come downstream in the next six weeks. It's really only two feet, Tony Norris replied – Grand Coulee is at elevation 1281 today. That water will come down gradually over the next few weeks, but it's not going to make a huge difference in flow, he said – essentially, we're at 1281 feet plus operating range right

now, and plan to draft the project to 1278 feet plus operating range by August 31. So we'll get two feet of Grand Coulee storage, plus, possibly, some Canadian storage, in August? Heinith asked. Essentially, yes, was the reply. That means we're looking at minimum flows of 75 Kcfs-80 Kcfs in the lower river through the rest of July and August? Heinith asked. That's probably correct, Henriksen replied.

It sounds, then, as though we have to have 68 Kcfs in total river flow if we're going to spill at The Dalles, Litchfield observed. That's correct, Henriksen replied. What is the recommended operation if flow at The Dalles is in the 68 Kcfs-70 Kcfs range? Silverberg asked. Peters said that, even at a spill volume of less than 18 Kcfs at The Dalles, because spill at that project clears the basin quickly, at least some spill would still be more beneficial than turbine passage.

Is it fair to say, then, that what we need to do is set a total river flow target for each project, based on the minimum spill volumes and powerhouse minimums at Bonneville, The Dalles and possibly John Day, and spill when total river flow exceeds those targets? Litchfield asked. I think so, Silverberg replied. Peters observed that, while that might apply to Bonneville and John Day, it probably doesn't apply at The Dalles, where at least some spill around the clock would likely be more beneficial than all-turbine passage. Fredricks said he would go out on a limb and say that, based on all of the research he has seen, 15 Kcfs is the minimum acceptable spill volume at The Dalles. I just wouldn't be comfortable spilling less than 15 Kcfs at that project, Fredricks said. That would put the minimum total river flow at The Dalles under which spill could occur at 71 Kcfs, Maslen observed.

So if flows at The Dalles are 71 Kcfs (hourly) or greater, the TMT's recommendation is to spill whatever volume remains above minimum powerhouse discharge at The Dalles? Silverberg asked. That's correct, was the reply.

In response to a question, Turner noted that there appears to be an equipment-related constraint at Bonneville; flows cannot be reduced much below 75 Kcfs if the turbines are to stay within 1% peak efficiency.

Maslen reiterated the suggestion that the group attempt to define the minimum river flow at which some spill could occur at each project. It sounds, from what I've heard, that if we try to maintain 75 Kcfs-80 Kcfs at Bonneville, we should be able to provide at least some spill at The Dalles, he said. It also sounds as though spill would not be an option at Bonneville if flows are in the 75 Kcfs-80 Kcfs range, added Robyn MacKay. That's probably correct, was the reply. Fredricks noted that 15 Kcfs is a bare minimum spill volume at The Dalles; again, NMFS would prefer to spill 40% of total river flow.

What about the possibility of shifting generation from The Dalles to other projects so that you could spill more at The Dalles? Scott Boyd asked. I did check on that, Maslen replied; the answer I got was that the minimum powerhouse flows at each project are in fact the minimums, so such an exchange would not be an option.

Heinith said CRITFC's recommendation is to turn any volume above that needed for minimum powerhouse discharge at Bonneville, The Dalles and John Day into spill. That's what we've been talking about today, Maslen replied – the fact that, particularly at Bonneville and John Day, that type of a spill program would likely produce conditions that are more detrimental to fish than a zero spill program.

What about the possibility of curtailing spill for several hours at Bonneville to store water in the forebay, so that we could spill at least 45 Kcfs for, say, 16 hours a day rather than 24? Turner asked. After a brief discussion, Turner corrected himself, observing that instantaneous minimum flow and operational requirements would severely limit forebay storage opportunity at low flows, so that such an operation would not have much effect.

A big part of the problem with this issue is the fact that, at these flow levels, we're outside our range of knowledge about whether spill at such low-flow levels, or on an on-again, off-again basis, is beneficial, or detrimental, to fish, Peters observed. The other problem, of course, is that we're on the edge of what is an absolutely worst-case scenario, said Maslen.

Mallette said she is extremely disappointed to learn of the "miscellaneous flow" constraints at such a late hour; this may be attributable to the fact that we've never before been in such a dire flow situation, she said. However, it is disturbing to hear the federal agencies talking about erring on the side of not providing any spill, given the biological uncertainties associated with providing spill under these flow conditions. Oregon's recommendation is that the action agencies do what they can to stabilize lower river flows in the 75 Kcfs-80 Kcfs range, and provide whatever spill they can at each of the three lower-river projects, she said.

The discussion turned to the volume of water currently in federal storage; Heinith observed that BPA reported last week that there is the equivalent of 32,000 MW-months currently in storage. Maslen and MacKay replied that the additional 4,000 MW-months will be drafted between now and September 30 in order to meet minimum flows in the system. Couldn't BPA just purchase a little more? Filardo asked. The problem, as Therese Lamb has been telling us, is that river flows are forecast to be at record low levels between now and September, Litchfield replied. I understand that, Filardo asked; my question is, if there had been no talk about a spill program, would total river flows still be receding at this point in the season? We've been moving in that direction for some weeks, Maslen replied.

In response to another question, Turner said average total discharge for the last 24 hours at The Dalles was actually 73.4 Kcfs, with a miscellaneous flow of 5.9 Kcfs.

It sounds like the only good news is that we have a "maybe" on spill at The Dalles, as long as flows stay above 71 Kcfs at that project, Wagner observed. Bonneville is another question; there is a lot of uncertainty about whether or not there will be any spill at Bonneville, particularly on the weekends, he said.

The discussion returned to the question of whether on-again, off-again spill blocks would be acceptable at Bonneville, and of what frequency and duration. Fredricks said he definitely

would not turn spill on and off more than once a day at Bonneville; beyond that, he said, I don't know what would be OK and what would not – it all boils down to how much risk you're willing to tolerate.

Looking at the SSARR, said Henriksen, over the next week, I don't see a single day when Bonneville flows are going to meet the 84 Kcfs minimum required to provide 45 Kcfs spill. Fredricks said that, in that case, turning spill on for a day, then off for a day, would be preferable to no spill at all. No question about it, Heinith agreed. Fredricks said that, in his mind, every time spill is turned on and off, you kill fish – it just boils down to a judgement call about which operation is more detrimental to fish.

In response to another question from Silverberg, Fredricks and Maslen said there is no possibility of doing additional monitoring this summer to investigate the efficacy of the 2001 summer spill operation.

Heinith reiterated CRITFC's recommendation that the action agencies spill whatever water is not required to meet minimum powerhouse discharges at the three lower-river projects.

It sounds as though we have resolution at The Dalles – 15 Kcfs minimum spill, up to 40% of total river flow, and if total river flow falls below 71 Kcfs, spill gets turned off until flows exceed 71 Kcfs again, Henriksen said. We could very easily use all 200 MW-months at The Dalles, she said; the question is, do we want spill at Bonneville as well? The problem is that total river flow is so low that I'm not sure we can predict, 24 hours in advance, that we will exceed 84 Kcfs on a day-average at Bonneville, she said.

What about CRITFC's recommendation that we should spill anything above the powerhouse minimum flow at Bonneville, even if that gives us less than 45 Kcfs? MacKay asked. NMFS' recommendation is not to spill at Bonneville if spill volume falls below 45 Kcfs, Fredricks replied; however, it's a subjective judgement about the point at which the benefits of spill are outweighed by dangerous egress conditions. The SIMPAS model would suggest a 6% survival benefit if you spill 31 Kcfs (at 70 Kcfs total river flow) vs. zero spill; that would be offset, to an extent no one knows for sure, by decreased turbine survival, he said. I wish I had more information, Fredricks said; above all, I wish we had more water, so that we didn't have to have this conversation.

So NMFS' position is that we should not spill at Bonneville if total river flow falls below 84 Kcfs? Silverberg asked. That's what we said, up until CRITFC made its suggestion about spilling anything over powerhouse minimum flow, Fredricks replied. Does that mean we're back to concentrating on spill at The Dalles, given the fact that total flow at Bonneville is unlikely to reach 84 Kcfs over the next week? Henriksen asked. I don't think you can conclude that, said Heinith – that's an ongoing discussion.

Maslen observed that, with 31 Kcfs spill, the physical conditions in the tailrace won't be anything like the conditions assumed in the SIMPAS model – it will produce an eddy back toward the center of the river. No question, Fredricks and Peters agreed.

Are there any TMT members who support going below 45 Kcfs spill at Bonneville, based on what they have heard today? Silverberg asked. Oregon does, Mallette replied. How low do you support going? Silverberg asked. Given all of the uncertainties we've heard expressed today, I believe we should provide whatever volume of spill is available above minimum powerhouse flow, Mallette replied. I don't have a suggestion about how we could quantify the biological benefits of such a less-than-optimal spill program, she said; on the other hand, I am not aware of any ability to demonstrate the benefits that would be gained by not spilling.

Shane, the Washington representative, said there isn't enough information on which to base a recommendation at this point. Steve Pettit said Idaho would hate to take a spill program off the table at this late date; in his opinion, in this particular water year, there could well be some biological benefit to a spill volume of less than 45 Kcfs at Bonneville – how low, he said, is anyone's guess at this point.

Wagner suggested that it may make sense to spill a minimum of 45 Kcfs during the hours when total river flow at Bonneville exceeds 84 Kcfs, rather than spilling a lesser volume around the clock. During the hours when total river flow is below 84 Kcfs, you would not spill, he said – essentially, the people who are familiar with the Bonneville project, and the applicable modeling tools, feel it is not beneficial to fish if you spill at a volume less than 45 Kcfs at Bonneville. That is NMFS' recommendation, based on the best available information, Wagner said.

In response to another question from Silverberg, Fredricks said that, given typical project operations, it is unlikely that spill would be turned on and off more than once a day, even if such a program was implemented. Pettit said Idaho would be willing to entertain this compromise. David Wills said the Fish and Wildlife Service supports spreading the risk across all routes of passage; it is impossible to guess at what minimum levels of spill the detriments begin to outweigh the benefits. Wills said the Fish and Wildlife Service is willing to support Wagner's suggested compromise. Mallette said Oregon is also willing to support this compromise, as long as Bonneville spill is not turned on and off at random.

It sounds, then, as though we have agreement, Henriksen said; to be clear, however, given the flows we've seen over the past week or so, it is likely that there would be only a few hours of daytime spill at Bonneville – only a few hours during which total river flow would exceed 84 Kcfs. Would it be better to shape the available Bonneville spill into nighttime hours? If possible, yes, Filardo replied – juvenile passage at Bonneville is higher at night.

In response to another question, Maslen said it may be difficult to provide enough water to spill at night, given the fact that actual nighttime flows are lower than flows during the peak daytime hours. Maslen said he will check on the feasibility of the request to provide nighttime spill and report back to the TMT.

Litchfield observed that it makes little or no sense to turn spill on for a few hours at Bonneville, then turn it off again, stranding the fish in the tailrace. That's why we need 24-hour spill at Bonneville, even if you have to go down to 31 Kcfs of spill volume, Heinith said.

NMFS is the agency charged with regulating the spill program, said Silverberg, from a procedural standpoint, I'm not sure how to get around the fact that they have said they are unwilling to support spill of less than 45 Kcfs at Bonneville. Pettit said that, given forecast record water temperatures, he is uncomfortable with the idea of any ponding to provide the volume necessary for nighttime spill – that could have a serious detrimental impact on adult passage. That would also be a concern to CRITFC, as is the possibility of adult fallback due to lack of spill, said Tom Lorz.

Do others share those concerns? Silverberg asked. I think that, given the limited opportunity to pond, increased forebay temperatures are unlikely to be a major concern, Maslen replied.

I'm not hearing that we have enough water to spill at Bonneville at all, said Henriksen – unless flows exceed 84 Kcfs on a day-average, it doesn't sound as though we have agreement that spill should proceed there.

What about the question of adult fallback due to lack of spill? Heinith asked – there are several thousand adult steelhead making their way upstream right now, and CRITFC thinks that could be a problem. Is that more beneficial than the fish falling back through other routes? Maslen asked. The fallback rate is much lower than normal this year, arguably because we aren't providing any spill, he said. Falling back through spill would likely be better than falling back through other routes, although the narrower the opening, the worse the conditions would be for adult fish, Fredricks said, adding that he agrees that less fallback than normal is being observed this year.

To summarize, I think we have agreement on what is going to happen at The Dalles, said Silverberg – whenever hourly flows are 71 Kcfs or greater, we will spill. Minimum spill at the project is 15 Kcfs, up to 40% of total river flow. At Bonneville, what I'm hearing is that if we have a projection of total river flow, on a day-average, of 84.2 Kcfs or greater, then we will spill 45 Kcfs during the hours when flow will exceed 84.2 Kcfs at that project, she said.

The group devoted a few minutes of discussion to the proposed spill program at Bonneville; there was considerable ambiguity about the details of the proposed spill program at this project. Maslen said he would recommend trying to develop a project instruction as clean as the one TMT has developed for The Dalles; the only thing I've heard for sure, he said, is that Bonneville is the one project at which spill should not be turned on and off. Litchfield suggested that what the instruction to the project should say is that, whenever hourly flows are projected to exceed 84.2 Kcfs at Bonneville for at least four or five consecutive hours, spill will occur. Filardo recommended that the spill blocks be no less than 12 hours, if possible, and should occur, if possible, during nighttime hours. Essentially, the recommendation is to spill at least 45 Kcfs for at least five hours at Bonneville, and to turn spill on and off no more than once per day, Maslen observed.

Ultimately, Henriksen suggested that the Corps be allowed to frame up a project

instruction that will capture the suggested Bonneville and The Dalles spill operations, for presentation at tomorrow's IT conference call. The U.S. Fish and Wildlife Service, Washington, Oregon, Idaho and NMFS agreed that it would be appropriate for the Corps and BPA to draft the project instruction for presentation at tomorrow's IT call.

Does anyone disagree with the ad hoc technical group's conclusion that spill is not feasible at John Day this summer, due to poor tailrace egress conditions at these low total river flows? Maslen asked. No disagreements were voiced.

It was further agreed that there will be no TMT meeting this Wednesday, unless necessitated by tomorrow's IT meeting. With that, the conference call was adjourned. Meeting notes prepared by Jeff Kuechle, BPA contractor.

LIST OF MEETING PARTICIPANTS

TMT CONFERENCE CALL JULY 23, 2001

Name	**Affiliation**
Ruth Abney	COE
Scott Boyd	COE
Ruth Burris	
Margaret Filardo	FPC
Gary Fredricks	NMFS
Russ George	Water Management Consultants Inc.
Richelle Harding	D. Rohr & Associates
Robin Harkless	Facilitation Team
Cindy Henriksen	COE
Jim Litchfield	Consultant (Montana)
Tom Lorz	CRITFC
Robyn MacKay	BPA
Christine Mallette	ODFW
Kyle Martin	CRITFC

Bill Maslen	BPA
Tony Norris	Reclamation
Rock Peters	COE
Steve Pettit	IDFG
Chris Ross	NMFS
James Scott	U.S. Department of Fish and Wildlife
Donna Silverberg	Facilitation Team
Rudd Turner	COE
Paul Wagner	NMFS
David Wills	USFWS